A1 Cont.

56. The vehicular headlight system of claim 45 wherein said vehicular headlight system comprises at least one headlight which contains at least two illumination directing elements, each of said elements being individually controllable with regard to the selection of which of at least two output directions of illumination will be emitted respectively therefrom.

57. The vehicular headlight system of claim 45 wherein said controller comprises at least one element selected from the group consisting of; illumination control software, illumination control logic, illumination control circuit, threshold filter, proximity estimator, memory, processor, switch array, manual bypass, iterative process, and serial sensor input.

Excess Claims

A check is enclosed for excess claims as follows:

17_Dependant Claims in excess of twenty = $153

Total enclosed = $153

Conditional Request For Constructive Assistance

Applicant has amended by revising claims which are proper, definite, and define novel structure and uses which are also un-obvious. If, for any reason, this application is thought not to be in full condition for allowance, applicant respectfully requests the constructive assistance and suggestions of the Examiner pursuant to M.P.E.P. Sec. 706.03(d) and Sec. 707.07(j) in order that the undersigned can place this application in allowance condition as soon as possible and without the need for further proceedings.

Very Respectfully Submitted,

Ray M. Alden
Applicant Pro Se
808 Lake Brandon Trail
Raleigh, NC 27610
Tel (919) 231-4418

Sent via Express Mail #
7002 0860 0005 2496 8160

Patent Application of

Ray M. Alden

for

TITLE: Segmented Distribution ~~-Headl--Light~~ System, Method, and Apparatus

BACKGROUND FIELD OF INVENTION

Over the past one hundred years, electric lighting has been implemented using many well know techniques to provide illumination in many applications. Well known electrical illumination techniques include incandescent, gas, and LED to name a few. In more recent decades, the prior art has incorporated sensors to control the on or off condition of a light source to provide illumination only when desired and to discontinue (or alternately dim) illumination when desired. Specifically, implementation of variable distribution vehicle headlights has been described in the prior art wherein a first vehicle includes a means to sense the presence or intensity of oncoming vehicle headlights of a second vehicle so as to automate the process of switching headlights of the first vehicle between a state of high beam and low beam.

The present invention provides a significant advancement in variable distribution headlights by providing a means to automatically dim some portions of the headlight distribution pattern while concurrently keeping other portions of the headlight distribution pattern illuminated on high beam. The result is an automated headlight system which enables the driver of a vehicle so equipped to see optimally while concurrently the driver of an oncoming (or alternately a leading) vehicle also can see optimally.

BACKGROUND-DESCRIPTION OF PRIOR INVENTION

The prior art describes headlight illumination systems which automatically switch headlights between a high beam state and a low beam state. Said systems incorporating a first element to sense the presence of oncoming vehicles and a second element to send a corresponding signal to vary the intensity of headlights connected thereto and a third element for illumination (headlights which are varied according to sensed conditions). As an alternate to varying light intensity, the prior art teaches, providing a means to redirect headlights from a higher direction to a lower direction (and vice versa)

filter, polymer dispersed liquid crystal, illumination deflector, variable refractor, afocal illumination input, diverging illumination output, variable prism, lens, and liquid crystal

27. The method of producing concurrent higher intensity illumination sectors where no vehicles are present and lower intensity illumination sectors where vehicles are present of claim 21 wherein a plurality of independently controlled illumination sectors corresponds with the area of lower intensity illumination provided for one vehicle.

28. The method of producing concurrent higher intensity illumination sectors where no vehicles are present and lower intensity illumination sectors where vehicles are present of claim 21 wherein a plurality of illumination sectors corresponding to a plurality of sensed vehicles can be illuminated at said lower illumination intensity while concurrently a plurality of illumination sectors corresponding to a plurality of sectors with no sensed vehicles can be illuminated at said higher illumination intensity.

29. The method of producing concurrent higher intensity illumination sectors where no vehicles are present and lower intensity illumination sectors where vehicles are present of claim 21 wherein the lower intensity illumination sectors provided for one vehicle is at least sixty percent surrounded by sectors of said higher illumination intensity when the headlight illumination system's output illumination pattern is incident upon an imaginary output traversing cross sectional plane located at the position of the other vehicle.

30. The method of producing concurrent higher intensity illumination sectors where no vehicles are present and lower intensity illumination sectors where vehicles are present of claim 21 wherein said vehicular headlight system comprises at least one headlight which contains at least two illumination emitting elements each of said elements being individually controllable with regard to which of at least two illumination intensities are emitted there from.

31. The method of producing concurrent higher intensity illumination sectors where no vehicles are present and lower intensity illumination sectors where vehicles are present of claim 21 wherein said vehicular headlight system comprises at least one headlight which contains at least two illumination filter elements, each of said elements being individually controllable with regard to controlling which of at least two intensities of illumination is permitted to pass there through.

32. The method of producing concurrent higher intensity illumination sectors where no vehicles are present and lower intensity illumination sectors where vehicles are present of claim 21 wherein said vehicular headlight system comprises at least one headlight which contains at least two illumination directing elements, each of said elements being individually controllable with regard to the selection of which of at least two output directions of illumination will be emitted respectively therefrom..

33. The method of producing concurrent higher intensity illumination sectors where no vehicles are present and lower intensity illumination sectors where vehicles are present of claim 21 wherein said controller comprises at least one element selected from the group consisting of; illumination control software, illumination control logic, illumination control circuit, threshold filter, proximity estimator, memory, processor, switch array, manual bypass, iterative process, and serial sensor input.

34. A vehicle headlight illumination system comprising,
a means for sensing the location of at least one other vehicle,
a means for diminishing the amount of illumination directed to said at least one other vehicle, wherein the diminished illumination of said vehicle headlight illumination system is at least sixty percent surrounded by higher intensity illumination, when the headlight illumination system's output illumination pattern is incident upon an imaginary output traversing cross sectional plane located at the position of the other vehicle.

35. The vehicle headlight illumination system of claim 34 wherein the distribution pattern of said diminished illumination is a fraction of both the horizontal and the vertical cross section of the total illumination distribution provided by said vehicular headlight system.

36. The vehicle headlight illumination system of claim 34 wherein the vehicle location sensing means senses electromagnetic radiation emitted by said at least one other vehicle.

37. The vehicle headlight illumination system of claim 34 wherein said vehicle location sensing means converts electromagnetic radiation to an electric signal.

38. The vehicle headlight illumination system of claim 34 wherein said means for diminishing comprises the control of at least one element selected from the group consisting of; illumination emitting source, light emitting diode, diode, illumination filter, electro-chromatic filter, polymer dispersed liquid crystal, illumination deflector, variable refractor, afocal illumination input, diverging illumination output, variable prism, lens, and liquid crystal.

39. The vehicle headlight illumination system of claim 34 wherein said means for diminishing the illumination directed to a single vehicle comprises at least two independently controlled elements, selected from the group consisting of; illumination emitting source, light emitting diode, diode, illumination filter, electro-chromatic filter, polymer dispersed liquid crystal, illumination deflector, variable refractor, afocal illumination input, diverging illumination output, variable prism, lens, and liquid crystal.

40. The vehicle headlight illumination system of claim 34 wherein a plurality of illumination sectors corresponding to a plurality of sensed vehicles can be illuminated at said lower illumination intensity while concurrently a plurality of illumination sectors corresponding to a plurality of sectors with no sensed vehicles can be illuminated at said higher illumination intensity.

41. The vehicle headlight illumination system of claim 34 wherein said vehicle headlight illumination system comprises at least one headlight which contains at least two illumination emitting elements each of said elements being individually controllable with regard to which of at least two illumination intensities are emitted there from.

42. The vehicle headlight illumination system of claim 34 wherein said vehicle headlight system comprises at least one headlight which contains at least two illumination filter elements, each of said elements being individually controllable with regard to controlling which of at least two intensities of illumination is permitted to pass there through.

43. The vehicle headlight illumination system of claim 34 wherein said vehicle headlight system comprises at least one headlight which contains at least two illumination directing elements, each of said elements being individually controllable with regard to the selection of which of at least two output directions of illumination will be emitted respectively therefrom..

44. The vehicle headlight illumination system of claim 34 wherein said means for diminishing comprises at least one element selected from the group consisting of; illumination control software, illumination control logic, illumination control circuit, threshold filter, proximity estimator, memory, processor, switch array, manual bypass, iterative process, and serial sensor input.

45. A vehicular headlight system comprising,
a sensor for sensing other vehicles,
a vehicular headlight system adapted to provide variable illumination in a plurality of individually controlled illumination sectors,
a variable illumination controller,
whereby said controller receives input from said sensor and causes said headlight system to diminish the amount of light directed toward sectors containing vehicles while concurrently not diminishing the amount of light directed toward sectors not containing vehicles.

46. The vehicular headlight system of claim 45 wherein each illumination sector is a fraction of both the horizontal and the vertical cross section of the total illumination distribution provided by said vehicular headlight system when the headlight illumination system's output illumination pattern is incident upon an imaginary output traversing cross sectional plane located at the position of the other vehicle.

47. The vehicular headlight system of claim 45 wherein a first illumination sector overlaps with at least some portion of a second illumination sector.

48. The vehicular headlight system of claim 45 wherein said vehicle sensor senses electromagnetic radiation emitted by at least one other vehicle.

49. The vehicular headlight system of claim 45 wherein said sensor converts electromagnetic radiation to an electric signal.

50. The vehicular headlight system of claim 45 wherein at least one of the said individually controlled elements within said vehicular headlight system comprises at least one element selected from the group consisting of; illumination emitting source, light emitting diode, diode, illumination filter, electro-chromatic filter, polymer dispersed liquid crystal, illumination deflector, variable refractor, afocal illumination input, diverging illumination output, variable prism, lens, and liquid crystal

51. The vehicular headlight system of claim 45 wherein a plurality of independently controlled illumination sectors corresponds with the area of lower intensity illumination provided for one vehicle.

52. The vehicular headlight system of claim 45 wherein a plurality of illumination sectors corresponding to a plurality of sensed vehicles can be illuminated at said lower illumination intensity while concurrently a plurality of illumination sectors corresponding to a plurality of sectors with no sensed vehicles can be illuminated at said higher illumination intensity.

53. The vehicular headlight system of claim 45 wherein the lower intensity illumination sectors provided for one vehicle is at least sixty percent surrounded by sectors of said higher illumination intensity when the headlight illumination system's output illumination pattern is incident upon an imaginary output traversing cross sectional plane located at the position of the other vehicle.

54. The vehicular headlight system of claim 45 wherein said vehicular headlight system comprises at least one headlight which contains at least two illumination emitting elements each of said elements being individually controllable with regard to which of at least two illumination intensities are emitted there from.

55. The vehicular headlight system of claim 45 wherein said vehicular headlight system comprises at least one headlight which contains at least two illumination filter elements, each of said elements being individually controllable with regard to controlling which of at least two intensities of illumination is permitted to pass there through.

56. The vehicular headlight system of claim 45 wherein said vehicular headlight system comprises at least one headlight which contains at least two illumination directing elements, each of said elements being individually controllable with regard to the selection of which of at least two output directions of illumination will be emitted respectively therefrom.

57. The vehicular headlight system of claim 45 wherein said controller comprises at least one element selected from the group consisting of; illumination control software, illumination control logic, illumination control circuit, threshold filter, proximity estimator, memory, processor, switch array, manual bypass, iterative process, and serial sensor input.